[redacted]

2 December 1964

STAT

1. Alignment of optical axes unsatisfactory convergence angle too large

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Instructed [redacted] to set this angle the same as that of the original instrument

2. Interpupillary adjustment minimum is not small enough. Present minimum is 62mm. Poor design - two adjustments. Instructed [redacted] to set this at 55mm.

STAT

3. The covers on the right angle mirror systems are not satisfactory. They do not provide good mechanical seals against either dust or light.

4. The fields do not fully overlap. There is approximately 15% hyperfusion.

5. Resolution tests

a. W/O stretch, 10X eyepiece, at 3.0 zoom setting, 7-2 or 3 144-61

b. Same but with 3X stretch.
7-2 or 144
very noticeable, blue-fringing

c. At > 3X stretch we were unable to achieve good focus.

6. Exit pupil appears to have considerable astigmatism - not possible to define - exit pupil is obviously imaged in many different planes.

7. The angular rotary motion is still very stiff.

8. The interior field is ellipticly constrained before the eyepiece stop

9. It is very difficult to align one's head with the exit pupils if significant stretch is present.

10. There appears to be a loss of contrast in the left zone of the left channel.

11. Dirt is apparent on internal planes when there is no imagery.

12. Stick up numbers indicating zoom ratio are coarsely graduated, and not very permanent.

ANAMORPHIC EYEPIECE

OPERATION INSTRUCTIONS

Optical Alignment Before Use

After assembling the Anamorphic Eyepiece Adapter to the Zoom 70 microscope optical adjustments must be made.

The adapters are factory aligned. Nevertheless, they have to be adjusted to the observer's eyes and interpupilar distance.

In order to do this, the following steps are recommended:

Step 1

The operator must set the interpupilar distance to his personal value.

Step 2

Set the anamorphic stretch A to zero and set the Zoom knob Z at the Zoom 70 microscope to maximum zoom. Focus the target by using the big hand wheel F at the column of the Zoom 70 stand. Then set the zoom knob Z to minimum zoom. The image seen through the eyepiece must stay in focus.

In case it does not, adjust the individual eyepiece focus D until the image through the anamorphic adapter stays in focus throughout the entire zoom range.

Step 3

For the following adjustment do not touch the main focusing knob F nor the individual eyepiece adjustment rings D.

Set the anamorphic stretch A to maximum (3X). Operate the fine focus ring FF until vertical and horizontal lines are in focus simultaneously. Going back to zero stretch A the image must be in focus. Steps 1, 2 and 3 are necessary to fit the assembly to the user's eyes.

After this the anamorphic adapters are ready for use with the Zoom 70.

Using the anamorphic stretch feature the direction of the "stretch" may be changed by rotating the stretched image by means of levers L.